IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the present application:

1-7. (Canceled)

8. (Currently amended) A method to implement a medium access (MAC) protocol for a local-area optical wavelength division multiplexed (WDM) network, the ~~MAC protocol~~method comprising:

transmitting a first control packet over a control channel of the WDM network, the WDM network comprising a scheduler, a data channel, and a plurality of nodes, each of the plurality of nodes coupled to the control channel and the data channel, the first control packet specifying a first one of the plurality of nodes in the network as a source node, a second one of the plurality of nodes in the network as a destination node, a value which corresponds to an amount of information which the source node can transmit, and a preview of a second control packet; and

after transmitting the first control packet, waiting a predetermined period of time related to the value specified in the first control packet.

9. (Currently amended) The ~~protocol~~method of Claim 8, further comprising:

receiving the first control packet at each of the plurality of nodes in the network;

and

in response to the source node receiving the first control packet, transmitting from the source node onto the data channel an amount of information not greater than the amount specified in the first control packet.

10. (Currently amended) The ~~protocol~~method of Claim 8, wherein in response to the destination node specified in the control packet receiving the first control packet, the destination node monitors the data channel for data following the first control packet.

11. (Currently amended) The ~~protocol~~method of Claim 10, wherein the destination node specified in the first control packet retrieves the data from the data channel of the network.

12. (Currently amended) The ~~protocol~~method of Claim 8, wherein the amount of information specified in the first control packet corresponds to a predetermined number of data packets.

13. (Currently amended) The ~~protocol~~method of Clam 9, wherein transmitting the amount of information includes transmitting one or more data packets immediately or after a delay known to both the scheduler and the node.

14. (Currently amended) The ~~protocol~~method of Claim 8, wherein in response to the node to which the first control packet is addressed receiving packet, immediately or after a delay known to

both the scheduler and the node transmitting no more bytes than are permitted by the first control packet.

15. (Currently amended) The ~~protocol~~method of Claim 9, wherein receiving the first control packet at each of the plurality of notes in the network includes passively tapping the control channel at each of the plurality of nodes in the network to receive the first control packet.

16. (Cancelled).

17. (Currently amended) The ~~protocol~~method of Claim 14, further comprising dispatching the second control packet after waiting for the predetermined period of time.

18. (Currently amended) The ~~protocol~~method of Claim 17, wherein at least one of a source node and a destination node specified in the second control packet is different than the source node and the destination node specified in the first control packet.

19. (Currently amended) The ~~protocol~~method of Claim 8, wherein the control channel and the data channel are carried by the same fiber and wherein the first control packet on the control channel is "out-of-band" from data on the data channel.

20. (Currently amended The ~~protocol~~method of Claim 8 wherein transmitting the first control packet includes transmitting the first control packet from a headend of the network.

21. (Currently amended) The ~~protocol~~method of Claim 20, wherein transmitting the first control packet from a headend of the network includes the headend dispatching a scheduler allocation message (SAM).

22. (Currently amended) The ~~protocol~~method of Claim 21 wherein the SAM specifies a source node address, a destination node address, and at least one of: (a) a number of bytes the source node may transmit to the destination node; and (b) an amount of time in which the source node may transmit.

23. (Previously presented) A scheduler adapted for use in a network, said scheduler comprising:

an interface to couple to a plurality of nodes in the network via an unidirectional optical path in the network, said unidirectional optical path having a control channel and a data channel;

a control message processor for transmitting on the control channel one or more control messages to each of the plurality of nodes, each of the control messages including a preview of a next control message, and each of the control messages allotting to at least one node a time period corresponding to a data transmission time for a node; and

a scheduler timing processor, in connection with said control message processor, said scheduler timing processor for causing said control message processor to wait a period of time corresponding to the allotted data transmission time for a node prior to said control message processor releasing another control message.

24. (Original) The scheduler of Claim 23 wherein said control message processor includes a scheduler authorization message (SAM) processor for transmitting on the control channel one or more SAMs to each of the plurality of nodes.

25. (Previously presented) The network of Claim 23 wherein the control and data channels are separate from each other.

26. (Previously presented) The network of Claim 23 wherein the individual data channels and control channels are distinguished by wavelength.

27. (Previously presented) The network of claim 25, wherein the control channel is out-of-band from the data channel.

28. (Previously presented) A method comprising:

periodically polling a plurality of nodes in a local-area optical wavelength division multiplexed (WDM) network to obtain statistical information on the plurality of nodes, said polling comprising sending a first control packet to each of the plurality of nodes over a control channel, the first control packet specifying a scheduler as a destination node, wherein each of the plurality of nodes sends feedback to the scheduler over a data channel in response to the first control packet; and

in response to a request from one of the plurality of nodes, transmitting a second control packet from the scheduler in the WDM network over the control channel of the WDM network,

the second control packet including a first value corresponding to an amount of information which the one of the plurality of nodes can transmit, and a preview of a third control packet.

29. (Previously presented) The method of claim 28, wherein the control channel and the data channel are in an unidirectional optical path within the WDM network.

30. (Previously presented) The method of claim 29, further comprising:

in response to a second request from a second one of the plurality of nodes, transmitting the third control packet from the scheduler over the control channel after waiting the predetermined period of time, the third control packet specifying a second value corresponding to a second amount of information which the second one of the plurality of nodes can transmit, wherein the second value differs from the first value.

31. (Currently amended) A method comprising:

scheduling packet transmissions by using a scheduler in a wavelength division multiplexed (WDM) network, the WDM network comprising the scheduler, a plurality of nodes, and a ~~plurality of~~ unidirectional optical ~~paths~~ path coupling the scheduler and the plurality of nodes to each other, ~~each of~~ the ~~plurality of~~ unidirectional optical ~~paths~~ path having a control channel and a data channel, said scheduling comprising

originating and sending a first control packet from the scheduler to a first node of the plurality of nodes to cause the first node to transmit information to a second node immediately or after a delay known to the scheduler and the first node, wherein the first control packet includes ~~a source~~ information identifying the first node as a source node, ~~a destination~~ information identifying the

second node as a destination node, and a value which corresponds to an amount of information which the source node can transmit; and

using the scheduler to schedule and provision for feedback from the plurality of nodes to the scheduler~~; and~~

~~the plurality of nodes transmitting and receiving a plurality of data messages on the plurality of unidirectional optical paths using a single wavelength.~~

32. (Previously presented) The method of claim 31, wherein using the scheduler to schedule and provision for feedback from the plurality of nodes to the scheduler comprises:

sending a third control packet over the control channel to each of the plurality of nodes specifying the scheduler as a destination; and

receiving the feedback from the plurality of nodes over the data channel as scheduled in the third control packet.

33. (Previously presented) The method of claim 31, further comprising:

the plurality of nodes simultaneously transmitting and receiving a plurality of data messages on the plurality of unidirectional optical paths.

34. (Canceled).

35. (Currently amended) The method of claim 8, wherein the preview in the control packet comprises information specifying a second source node of the second control packet, and said method further comprises:

in response to the second source node receiving the first control packet, the second source node preparing to send data according to the preview in the first control packet.

36. (Previously presented) The method of claim 31, wherein the plurality of unidirectional optical paths are configured into loops through which packets are transmitted.

37. (Previously presented) A method comprising:

receiving a first control packet over a control channel of a wavelength division multiplexed (WDM) network, the first control packet specifying a first one of a plurality of nodes in the WDM network as a source node, a second one of the plurality of nodes in the WDM network as a destination node, a value which corresponds to an amount of information which the source node can transmit, and a preview of a second control packet;

in response to the first control packet, a third one of the plurality of nodes retrieving a plurality of data packets based on the preview of the second control packet;

receiving the second control packet over the control channel after at least a predetermined period of time related to the value specified in the first control packet; and

in response to the second control packet, the third one of the plurality of nodes transmitting the plurality of data packets over a data channel of the WDM network.

38. (Previously presented) The method of claim 37, wherein the first and the second control packets are from a scheduler of the WDM network.

39. (New) The method of claim 31, wherein the plurality of nodes transmit and receive a plurality of data messages on the unidirectional optical path using a single wavelength.